```
LLL              IIIIIIIIII   BBBBBBBBBBBB   RRRRRRRRRRR    TTTTTTTTTTTTTTT   LLL
LLL              IIIIIIIIII   BBBBBBBBBBBB   RRRRRRRRRRR    TTTTTTTTTTTTTTT   LLL
LLL              IIIIIIIIII   BBBBBBBBBBBB   RRRRRRRRRRR    TTTTTTTTTTTTTTT   LLL
LLL                  III      BBB      BBB   RRR      RRR         TTT         LLL
LLL                  III      BBB      BBB   RRR      RRR         TTT         LLL
LLL                  III      BBB      BBB   RRR      RRR         TTT         LLL
LLL                  III      BBB      BBB   RRR      RRR         TTT         LLL
LLL                  III      BBB      BBB   RRR      RRR         TTT         LLL
LLL                  III      BBBBBBBBBBBB   RRRRRRRRRRR          TTT         LLL
LLL                  III      BBBBBBBBBBBB   RRRRRRRRRRR          TTT         LLL
LLL                  III      BBB      BBB   RRR    RRR           TTT         LLL
LLL                  III      BBB      BBB   RRR    RRR           TTT         LLL
LLL                  III      BBB      BBB   RRR      RRR         TTT         LLL
LLL                  III      BBB      BBB   RRR      RRR         TTT         LLL
LLL                  III      BBB      BBB   RRR      RRR         TTT         LLL
LLLLLLLLLLLLLLL      IIIIIIIIII   BBBBBBBBBBBB   RRR      RRR     TTT         LLLLLLLLLLLLLLL
LLLLLLLLLLLLLLL      IIIIIIIIII   BBBBBBBBBBBB   RRR      RRR     TTT         LLLLLLLLLLLLLLL
LLLLLLLLLLLLLLL      IIIIIIIIII   BBBBBBBBBBBB   RRR      RRR     TTT         LLLLLLLLLLLLLLL
```

FILEID**LIBFFC

```
LL          IIIIII   BBBBBBBB    FFFFFFFFFF  FFFFFFFFFF  CCCCCCCC
LL          IIIIII   BBBBBBBB    FFFFFFFFFF  FFFFFFFFFF  CCCCCCCC
LL            II     BB    BB    FF          FF          CC
LL            II     BB    BB    FF          FF          CC
LL            II     BB    BB    FF          FF          CC
LL            II     BB    BB    FF          FF          CC
LL            II     BBBBBBBB    FFFFFFFF    FFFFFFFF    CC
LL            II     BBBBBBBB    FFFFFFFF    FFFFFFFF    CC
LL            II     BB    BB    FF          FF          CC
LL            II     BB    BB    FF          FF          CC
LL            II     BB    BB    FF          FF          CC
LLLLLLLLLL  IIIIII   BBBBBBBB    FF          FF          CCCCCCCC    ....
LLLLLLLLLL  IIIIII   BBBBBBBB    FF          FF          CCCCCCCC    ....


LL          IIIIII      SSSSSSSS
LL          IIIIII      SSSSSSSS
LL            II      SS
LL            II      SS
LL            II      SS
LL            II        SSSSSS
LL            II        SSSSSS
LL            II              SS
LL            II              SS
LL            II              SS
LLLLLLLLLL  IIIIII      SSSSSSSS
LLLLLLLLLL  IIIIII      SSSSSSSS
```

**

```
0000     1              .TITLE  LIB$FFC - find first clear bit
0000     2              .IDENT  /1-002/                  ; File: LIBFFC.MAR
0000     3
0000     4
0000     5  ;********************************************************************
0000     6  ;*                                                                  *
0000     7  ;*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                         *
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0000    23  ;*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.         *
0000    24  ;*                                                                  *
0000    25  ;*                                                                  *
0000    26  ;********************************************************************
0000    27  ;
0000    28
0000    29  ;++
0000    30  ; FACILITY: General Utility Library
0000    31  ;
0000    32  ; ABSTRACT:
0000    33  ;
0000    34  ;     A bit string is scanned for the first bit clear.  If one is found before
0000    35  ;     the string is exhausted then a success status is returned.  Otherwise a
0000    36  ;     failure status is returned.
0000    37  ;
0000    38  ; ENVIRONMENT: User Mode, AST Reentrant
0000    39  ;
0000    40  ;--
0000    41  ; AUTHOR: Donald G. Petersen, CREATION DATE: 03-Jan-78
0000    42  ;
0000    43  ; MODIFIED BY:
0000    44  ;
0000    45  ;     DGP, 03-Jan-78 : VERSION 00
0000    46  ; 01    - Original
0000    47  ; 00-02 - DGP 06-Jan-78 - Change LIB$NOTFOU to a literal
0000    48  ; 00-03 - Return SS$_NORMAL instead of LIB$_NORMAL.  TNH 15-July-78
0000    49  ;                       change BEQL to BNEQ
0000    50  ; 1-001 - Update version number and copyright notice.  JBS 16-NOV-78
0000    51  ; 1-002 - Add "_" to PSECT directive.  JBS 21-DEC-78
```

LIB$FFC
1-002

M 10

- find first clear bit
DECLARATIONS

16-SEP-1984 00:08:34   VAX/VMS Macro V04-00   Page   2
6-SEP-1984 11:06:52   [LIBRTL.SRC]LIBFFC.MAR;1   (2)

```
        0000    53              .SBTTL  DECLARATIONS
        0000    54      ;
        0000    55      ; INCLUDE FILES:
        0000    56      ;
        0000    57
        0000    58
        0000    59      ; EXTERNAL DECLARATIONS:
        0000    60      ;
        0000    61              .DSABL  GBL                             ; Disable automatic generation of
        0000    62                                                      ; .EXTRN
        0000    63              .EXTRN  SS$_NORMAL                      ; Normal successful completion
        0000    64              .EXTRN  LIB$_NOTFOU                     ; SEVERE error condition
        0000    65                                                      ; Value not found
        0000    66
        0000    67      ;
        0000    68      ; MACROS:
        0000    69      ;
        0000    70
        0000    71      ;
        0000    72      ; EQUATED SYMBOLS:
        0000    73      ;
        0000    74
        0000    75
        0000    76      ; OWN STORAGE:
        0000    77      ;
        0000    78
        0000    79
        0000    80      ; PSECT DECLARATIONS:
        0000    81      ;
     00000000   82              .PSECT _LIB$CODE PIC, SHR, LONG, EXE, NOWRT
        0000    83
```

LIB$FFC
1-002

N 10

- find first clear bit
LIB$FCC - find first clear bit

16-SEP-1984 00:08:34   VAX/VMS Macro V04-00   Page   3
6-SEP-1984 11:06:52   [LIBRTL.SRC]LIBFFC.MAR;1   (3)

```
                                    0000        85              .SBTTL  LIB$FCC  - find first clear bit
                                    0000        86      ;++
                                    0000        87      ; FUNCTIONAL DESCRIPTION:
                                    0000        88      ;
                                    0000        89      ;       The field specified by the start position, size, and base is searched
                                    0000        90      ;       for the first clear bit.  If one is found, a success status is returned as
                                    0000        91      ;       well as the bit position (relative to the base) in the find position.
                                    0000        92      ;       If a clear bit is not found, a failure status is returned.  If a size of zer
                                    0000        93      ;       is specified then a failure status is returned.
                                    0000        94      ;
                                    0000        95      ; CALLING SEQUENCE:
                                    0000        96      ;
                                    0000        97      ;       status.wlc.v = LIB$FFC (startpos.rl.r, size.rbu.r, base.rl.r, findpos.wl.r)
                                    0000        98      ;
                        00000004    0000        99      ;       STARTPOS = 4                              ; Adr of start position
                        00000008    0000        100     ;       SIZE = 8                                  ; Adr of size
                        0000000C    0000        101     ;       BASE = 12                                 ; Adr of base
                        00000010    0000        102     ;       FINDPOS = 16                              ; Adr of field for clear bit positio
                                    0000        103     ;
                                    0000        104     ; INPUT PARAMETERS:
                                    0000        105     ;
                                    0000        106     ;       NONE
                                    0000        107     ;
                                    0000        108     ; IMPLICIT INPUTS:
                                    0000        109     ;
                                    0000        110     ;       NONE
                                    0000        111     ;
                                    0000        112     ; OUTPUT PARAMETERS:
                                    0000        113     ;
                                    0000        114     ;       NONE
                                    0000        115     ;
                                    0000        116     ; IMPLICIT OUTPUTS:
                                    0000        117     ;
                                    0000        118     ;       NONE
                                    0000        119     ;
                                    0000        120     ; FUNCTION VALUE:
                                    0000        121     ;
                                    0000        122     ;       SS$_NORMAL - if a clear bit is found
                                    0000        123     ;       LIB$_NOTFOU - if a clear bit is not found
                                    0000        124     ;
                                    0000        125     ; SIDE EFFECTS:
                                    0000        126     ;
                                    0000        127     ;       SS$_ROPRAND - reserved operand fault for:
                                    0000        128     ;               1.) size greater than 32 is specified
                                    0000        129     ;               2.) start position greater than 31 and field is in registers
                                    0000        130     ;--
                                    0000        131
                                    0000        132
                        0000        0000        133             .ENTRY LIB$FFC , ^M< >           ; Entry point
                                    0002        134
10 BC   0C BC   08 BC   04 BC   EB  0002        135             FFC     @STARTPOS(AP), @SIZE(AP), -      ; find first clear bit
                                    000B        136                     @BASE(AP), @FINDPOS(AP)
                        08  12      000B        137             BNEQ    10$                              ; branch if bit found
        50  00000000'8F  D0         000D        138             MOVL    #LIB$_NOTFOU, R0                 ; return failure status
                        04          0014        139             RET
        50  00000000'8F  D0         0015        140     10$:    MOVL    #SS$_NORMAL, R0          ; return success status
                        04          001C        141             RET
```

B 11

LIB$FFC   - find first clear bit   16-SEP-1984 00:08:34 VAX/VMS Macro V04-00   Page 4
1-002   LIB$FCC - find first clear bit   6-SEP-1984 11:06:52 [LIBRTL.SRC]LIBFFC.MAR;1   (3)

```
001D    142              .END
```

```
BASE          = 0000000C
FINDPOS       = 00000010
LIBSFFC         00000000 RG  01
LIB$_NOTFOU     ********  X   00
SIZE          = 00000008
SS$_NORMAL      ********  X   00
STARTPOS      = 00000004
```

+------------------+
! Psect synopsis !
+------------------+

```
PSECT name                Allocation          PSECT No.   Attributes
----------                ----------          ---------   ----------
.  ABS  .                 00000000 (    0.)   00 (  0.)   NOPIC   USR  CON  ABS  LCL NOSHR NOEXE NORD  NOWRT NOVEC BYTE
_LIB$CODE                 0000001D (   29.)   01 (  1.)   PIC     USR  CON  REL  LCL  SHR   EXE   RD   NOWRT NOVEC LONG
```

+----------------------------+
! Performance indicators !
+----------------------------+

```
Phase                    Page faults   CPU Time       Elapsed Time
-----                    -----------   --------       ------------
Initialization                   29    00:00:00.02    00:00:01.98
Command processing              111    00:00:00.30    00:00:03.04
Pass 1                           68    00:00:00.22    00:00:02.24
Symbol table sort                 0    00:00:00.00    00:00:00.00
Pass 2                           41    00:00:00.21    00:00:02.00
Symbol table output               2    00:00:00.01    00:00:00.01
Psect synopsis output             2    00:00:00.02    00:00:00.02
Cross-reference output            0    00:00:00.00    00:00:00.00
Assembler run totals            255    00:00:00.79    00:00:09.30
```

The working set limit was 900 pages.
1409 bytes (3 pages) of virtual memory were used to buffer the intermediate code.
There were 10 pages of symbol table space allocated to hold 7 non-local and 1 local symbols.
142 source lines were read in Pass 1, producing 11 object records in Pass 2.
0 pages of virtual memory were used to define 0 macros.

+------------------------------+
! Macro library statistics !
+------------------------------+

```
Macro library name                       Macros defined
------------------                       --------------
_$255$DUA28:[SYSLIB]STARLET.MLB;2               0
```

0 GETS were required to define 0 macros.

There were no errors, warnings or information messages.

MACRO/ENABLE=SUPPRESSION/DISABLE=(GLOBAL,TRACEBACK)/LIS=LIS$:LIBFFC/OBJ=OBJ$:LIBFFC MSRC$:LIBFFC/UPDATE=(ENH$:LIBFFC)

LIBEMODH
LIS

LIBEMODD
LIS

LIBESTEMU
LIS

LIBEF
LIS

LIBEMULAT
LIS

LIBFFS
LIS

LIBFINCVT
LIS

LIBE2AREV
LIS

LIBFAO
LIS

LIBEMODG
LIS

LIBEXTV
LIS

LIBEDIV
LIS

LIBESTABL
LIS

LIBFFC
LIS

LIBEMODF
LIS

LIBEMUL
LIS

LIBFILSCA
LIS

LIBEXTZV
LIS

LIBEBCASC
LIS

LIBFAOL
LIS